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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/650,135

08/28/2003

Tetsuro Hamada

00682P0072US

6331

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7590

08/20/2008

WOOD, PHILLIPS, KATZ, CLARK & MORTIMER

500 W. MADISON STREET

SUITE 3800

CHICAGO, IL 60661

EXAMINER

COLEMAN, KEITH A

ART UNIT

PAPER NUMBER

3747

MAIL DATE

DELIVERY MODE

08/20/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/650,135	<b>Applicant(s)</b> HAMADA ET AL.	
	<b>Examiner</b> KEITH COLEMAN	<b>Art Unit</b> 3747	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 July 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-26 and 29-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-26 and 29-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/1/2008</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Objections*

Applicant is also reminded to See MPEP 608.01(i) (c). One or more claims may be presented in dependent form, referring back to and further limiting another claim or claims in the same application. Dependent claims 14-20 refer forward to claim 35, which in turn depends on claim 13. Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 3-4, 6-15, 17, and 21-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Corona (Japanese Publication 08-075141), Kessler et al. (US Patent No. 4,503,826) and Maisch et al. (US Patent No. 4,326,487).

With regards to claims 1 and 8 the patent to Corona discloses a combustion apparatus comprising: a fuel tank (i.e. fuel tank 9, See Paragraph 8), a combustion chamber (i.e. combustion chamber , See Paragraphs 7-10) in which fuel from the fuel tank (9) is burned to generate heat, a spraying means (i.e. injector 1, See Paragraph 1) for spraying a fuel into the combustion chamber, a first channel (i.e. supply line 8) for supplying the fuel from the fuel tank (9) to the spraying means (1), a second channel (channel from valve 20) for flowing the fuel there through from the spraying means (1) to the first channel to be recirculated to the spraying means (1), except positively disclosing the spraying means configured to cause fuel supplied from the fuel tank to be continuously supplied to the combustion chamber for continuous burning therein and generation of heat therein, and an intermittently operating valve disposed in the second channel so as to be closed and opened intermittently or periodically to adjust an amount of the fuel continuously sprayed by the spraying means, wherein at least part of the intermittently operating valve is enclosed with a casing, and wherein the casing

comprises an inlet joint connected to an inlet side of the intermittently operating valve and an outlet joint connected to an outlet side of the intermittently operating valve.

The patent to Kessler discloses wherein at least part of the intermittently operating valve (50) is enclosed with a casing (i.e. 18 and 22), and wherein the casing comprises an inlet joint connected to an inlet side (34) of the intermittently operating valve and an outlet joint connected to an outlet side (54) of the intermittently operating valve except positively disclosing the spraying means configured to cause fuel supplied from the fuel tank to be continuously supplied to the combustion chamber for continuous burning therein and generation of heat therein, and an intermittently operating valve disposed in the second channel so as to be closed and opened intermittently or periodically to adjust an amount of the fuel continuously sprayed by the spraying means.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the operating valve of Corona with wherein at least part of the intermittently operating valve is enclosed with a casing, and wherein the casing comprises an inlet joint connected to an inlet side of the intermittently operating valve and an outlet joint connected to an outlet side of the intermittently operating valve] in view of the teaching to Kessler, in order to use a top fed injector as the spill valve in the return line since the spill valve of Corona functions similar to the injector of Kessler and both were used in fuel injection control situations.

As to the limitation of "the spraying means configured to cause fuel supplied from the fuel tank to be continuously supplied to the combustion chamber for continuous

burning therein and generation of heat therein, and an intermittently operating valve disposed in the second channel so as to be closed and opened intermittently or periodically to adjust an amount of the fuel continuously sprayed by the spraying means," it would have been further obvious to a person of ordinary skill in the art at the time the invention was made to modify the injection system of the combination of Corona and Kessler with the spraying means configured to cause fuel supplied from the fuel tank to be continuously supplied to the combustion chamber for continuous burning therein and generation of heat therein, and an intermittently operating valve disposed in the second channel so as to be closed and opened intermittently or periodically to adjust an amount of the fuel continuously sprayed by the spraying means in view of the teaching to Maisch, in order to provide an effective as a way to reduce fuel pressure and regulate the output of a continuous injection system (Col. 3, Lines 35-45 from Maisch).

With regards to claim 3, the combination of Corona, Kessler et al., and Maisch discloses all the limitations of the claimed subject matter including Kessler et al. disclosure of wherein the valve (50) is disposed in a space enclosed with the inlet joint and the outlet joint (See Figure 1).

With regards to claim 4, the combination of Corona, Kessler et al., and Maisch discloses all the limitations of the claimed subject matter including Kessler et al.

disclosure of wherein a connecting portion (34) with the inlet joint and the outlet joint are in close contact with each other (See Figure 1).

With regards to claim 6, the combination of Corona, Kessler et al., and Maisch discloses all the limitations of the claimed subject matter including Corona disclosure of further comprising a fuel pump (11, See Paragraph 4) for sending the fuel to the spraying means (1) and disposed in the first channel (8), and the combination would invariably meet the limitation of wherein the casing is directly connected to at least one of the fuel pump and the spraying means and is invariably an integration of parts. See MPEP 2144.04 Section V. Part B. In re Larson, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965) (A claim to a fluid transporting vehicle was rejected as obvious over a prior art reference which differed from the prior art in claiming a brake drum integral with a clamping means, whereas the brake disc and clamp of the prior art comprise several parts rigidly secured together as a single unit. The court affirmed the rejection holding, among other reasons, “that the use of a one piece construction instead of the structure disclosed in [the prior art] would be merely a matter of obvious engineering choice.”);

With regards to claim 7, the combination of Corona, Kessler et al., and Maisch discloses all the limitations of the claimed subject matter including Kessler et al. disclosure of wherein the intermittently operating valve (50) comprises a valve body (18) and a valve body housing (44) relative to which the valve body is guidingly moved, and

Corona disclosure of further comprising a sound insulating filling filled between the casing and the valve body housing (See Paragraph 3).

With regards to claim 9, the combination of Corona, Kessler et al., and Maisch discloses all the limitations of the claimed subject matter including Kessler et al. disclosure of further comprising a pressure buffer (44 and 46) for buffering a pressure in the second channel disposed in the second channel and secured to the casing (See Figure 1).

With regards to claim 10, the combination of Corona, Kessler et al., and Maisch discloses all the limitations of the claimed subject matter including Corona disclosure of further comprising a checking means (14) disposed in the second channel and secured to the casing for preventing the fuel flowing through the second channel from flowing backward (See Figure 1).

With regards to claim 11, the combination of Corona, Kessler et al., and Maisch discloses all the limitations of the claimed subject matter including Corona disclosure of further comprising: a pressure buffer (i.e. accumulator 15) for buffering the pressure in the second channel and a checking means (i.e. check valve 14) in the channel, and wherein the pressure buffer and the checking means are secured to the casing (See Figure 1).



With regards to claim 12, the combination of Corona, Kessler et al., and Maisch discloses all the limitations of the claimed subject matter including Kessler et al. disclosure of wherein to the casing is secured at least part of the second channel for flowing the fuel there through (See Figure 1 and Rejection for claim 6).

With regards to claim 13, the combination of Corona, Kessler et al., and Maisch discloses all the limitations of the claimed subject matter including Corona disclosure of a combustion apparatus comprising: a fuel tank (9), a combustion chamber (i.e. burner) in which fuel from the fuel tank (9) is burned to generate heat, a spraying means (1) for spraying a fuel into the combustion chamber, a first channel (8) for supplying the fuel from the fuel tank to the spraying means (1), a second channel (i.e. channel from valve mechanism to channel 8, See Figure 1) for flowing the fuel there through from the spraying means to the first channel to be recirculated to the spraying means (1), and Maisch disclosure of the spraying means configured to cause fuel supplied from the fuel tank to be continuously supplied to the combustion chamber for continuous burning therein and generation of heat therein, and an intermittently operating valve disposed in the second channel so as to be closed and opened intermittently or periodically to adjust an amount of the fuel continuously sprayed by the spraying means and having operating components in a housing (See Rejection for Claim 1).

With regards to claim 14, the combination of Corona, Kessler et al., and Maisch discloses all the limitations of the claimed subject matter including Kessler et al. disclosure of wherein the intermittently operating valve comprises a valve body capable of being driven so as to close and open the valve periodically and the valve housing accommodates the valve body, and the elastic member (i.e. the seal gasket 24) being mounted on the valve housing (See Figure 1 and Rejection in Claim 35).

With regards to claim 15, the combination of Corona, Kessler et al., and Maisch discloses all the limitations of the claimed subject matter including Kessler et al. disclosure of wherein the intermittently operating valve is connected to the casing via at least two connecting portions at both ends on inlet and outlet sides of the valve, and wherein at least the connecting portion at the end of the outlet side is sealed up with and supported firmly by the elastic member (See Figure 1).

With regards to claims 17, 30, 32, and 34, the combination of Corona, Kessler et al., and Maisch discloses all the limitations of the claimed subject matter including Kessler et al. disclosure of wherein the intermittently operating valve comprises a built-in actuator (i.e. diaphragm 46 actuates valve 50) reciprocating periodically so as to open and close the valve, wherein the elastic member is interposed in a space between the casing and the valve housing where a force in the direction of the reciprocation of the actuator acts (See Figure 1).

With regards to claim 21, the combination of Corona, Kessler et al., and Maisch discloses all the limitations of the claimed subject matter including Kessler et al. disclosure of wherein the intermittently operating valve comprises a valve body and a valve body housing relative to which the valve body is guidingly moved, the combustion apparatus further comprising at least one elastic member interposed between the intermittently operating valve housing and the casing (See Figure 1).

With regards to claim 22, the combination of Corona, Kessler et al., and Maisch discloses all the limitations of the claimed subject matter including Corona disclosure of a fuel control assembly for a combustion apparatus, the fuel control assembly comprising: a spraying means (1) for spraying a fuel from a tank (9), a channel (8) for flowing the fuel there through continuously to a combustion chamber, a return canal (valve mechanism 20 to channel 8) that communicates unburnt fuel back towards the tank (8), and an intermittently operating valve (20) disposed in the return canal so as to be closed and opened intermittently or periodically, wherein at least part of the intermittently operating valve is enclosed with a casing (See Figure 1).

With regards to claims 23-26, the combination of Corona, Kessler et al., and Maisch discloses all the limitations of the claimed subject matter including Maisch

disclosure of wherein the intermittently operating valve is repeatedly opened and closed at given time intervals (See Col. 3, Lines 25-35).

**With regards to claims 29, 31, and 33**, the combination of Corona, Kessler et al., and Maisch discloses all the limitations of the claimed subject matter including Kessler et al. disclosure of **further comprising two elastic members (24 and 20), one of which is interposed between the casing and the inlet side of the valve and the other of which is interposed between the casing and the outlet side of the valve (See Figure 1).**

**With regards to claims 35 and 38**, the combination of Corona, Kessler et al., and Maisch discloses all the limitations of the claimed subject matter including Kessler et al. disclosure of **wherein the combustion apparatus further comprises a casing (22 and 18) around the valve housing (housing for 44) and enclosing at least part of the intermittently operating valve (50, Figure 1), and at least one member (i.e. sealing gasket 24) interposed between the valve housing and the casing (See Figure 1).**

**With regards to claims 36**, the combination of Corona, Kessler et al., and Maisch discloses all the limitations of the claimed subject matter including Kessler et al.

disclosure of **wherein the operating components comprise a valve body that is movable guidingly relative to the housing (See Figure 1).**

**With regards to claim 37**, the combination of Corona, Kessler et al., and Maisch discloses all the limitations of the claimed subject matter including Kessler et al. disclosure of **wherein the combustion apparatus further comprises a casing around the housing (See Figure 1).**

**With regards to claims 39-42**, the combination of Corona, Kessler et al., and Maisch discloses all the limitations of the claimed subject matter including Corona disclosure of **wherein the spraying means is a return type nozzle (See Figure 1).**

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Corona (Japanese Publication 08-075141), Kessler et al. (US Patent No. 4,503,826) and Maisch et al. (US Patent No. 4,326,487) as applied above, and in further view of Mitushima (US Patent No. 6,722,305)

With regards to claim 5, the combination of Corona, Kessler et al., and Maisch discloses all the limitations of the claimed subject matter including Kessler et al. disclosure of wherein the inlet joint and the outlet joint having an indentation respectively, except positively disclosing so that the indentations jointly form a through-hole for letting there through a wiring connected to the valve, and the combustion

apparatus further comprises a seal which engages with each indentation so that it fits in the annular gap between the through-hole and a periphery of the wiring being mounted on the wiring.

The patent to Mitzushima discloses indentations jointly form a through-hole for letting there through a wiring connected to the valve (i.e. grommet 412), and the combustion apparatus further comprises a seal (306) which engages with each indentation so that it fits in the annular gap between the through-hole and a periphery of the wiring being mounted on the wiring.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the casing of the combination of Corona, Kessler et al., and Maisch with wherein the indentations jointly form a through-hole for letting there through a wiring connected to the valve, and the combustion apparatus further comprises a seal which engages with each indentation so that it fits in the annular gap between the through-hole and a periphery of the wiring being mounted on the wiring in view of the teaching to Mitzushima, in order to accommodate for the wiring and is a matter of engineering choice.

Claims 16 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Corona (Japanese Publication 08-075141), Kessler et al. (US Patent No. 4,503,826) and Maisch et al. (US Patent No. 4,326,487) as applied above, and in further view of Smith (US Patent No. 6,009,856)

With regards to claim 16, the combination of Corona, Kessler et al., and Maisch discloses all the limitations of the claimed subject matter including Kessler et al. disclosure of wherein the at least one elastic member comprises two elastic members (24 and 18), one of which is interposed between the casing and an inlet side of the valve and the other of which is interposed between the casing and an outlet side of the valve (See Figure 1 from Kessler), and except positively disclosing wherein the elastic member interposed between the casing and the outlet side has a stronger elastic force than the elastic member interposed between the casing and the inlet side.

The patent to Smith discloses wherein the elastic member (34, insulator) interposed between a casing and an outlet side has a stronger elastic force (i.e. withstand noise, vibrations, and heat, Col. 3, Lines 10-25)

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the elastic members of the combination of Corona, Kessler et al., and Maisch with wherein the elastic member interposed between the casing and the outlet side has a stronger elastic force than the elastic member interposed between the casing and the inlet side in view of the teaching to Smith, in order to dampen vibrations and noise (Col. 1, Lines 45-50 from Smith).

With regards to claim 18, the combination of Corona, Kessler et al., and Maisch discloses all the limitations of the claimed subject matter including Kessler et al. disclosure of wherein the intermittently operating valve has a built-in actuator reciprocating periodically so as to open and close the valve (i.e. diaphragm 46 actuates

valve 50), except positively disclosing further comprising: a vibration-isolating member interposed between the valve housing and the casing and for buffering a force acting from the valve housing to the casing in the direction of the reciprocation of the actuator, and a seal interposed between the valve housing and the casing so as to prevent the fuel flowing in and out of the valve from leaking.

The patent to Smith discloses further comprising: a vibration-isolating member (34, Col. 3, Lines 10-25) interposed between the valve housing and the casing and for buffering a force acting from the valve housing to the casing in the direction of the reciprocation of the actuator, and a seal (80) interposed between the valve housing and the casing so as to prevent the fuel flowing in and out of the valve from leaking (See Figure 2).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the injector and seals of the combination of Corona, Kessler et al., and Maisch with a vibration-isolating member interposed between the valve housing and the casing and for buffering a force acting from the valve housing to the casing in the direction of the reciprocation of the actuator, and a seal interposed between the valve housing and the casing so as to prevent the fuel flowing in and out of the valve from leaking in view of the teaching to Smith, in order to dampen vibrations and noise (Col. 1, Lines 45-50 from Smith).



With regards to claim 19, the combination of Corona, Kessler et al., Smith and Maisch discloses all the limitations of the claimed subject matter including Kessler et al. disclosure of wherein the intermittently operating valve has a built-in actuator reciprocating periodically so as to open and close the valve, and further comprising: a vibration-isolating member interposed between the valve housing and the casing and for buffering a force acting from the valve housing to the casing in the direction of the reciprocation of the actuator, and a seal interposed between the valve housing and the casing so as to prevent the fuel flowing in and out of the valve from leaking, and Smith disclosure of the vibration-isolating member having a stronger elastic force than the seal member (See Rejections in Claims 16 and 18).

With regards to claim 20, the combination of Corona, Kessler et al., Smith and Maisch discloses all the limitations of the claimed subject matter including Kessler et al. disclosure of wherein the intermittently operating valve has a built-in actuator reciprocating periodically so as to open and close the valve, and wherein the elastic member is interposed between the valve housing and the casing and Smith disclosure of comprises a vibration-isolating portion for buffering a force acting from the valve housing to the casing in the direction of the reciprocation of the actuator and a sealing portion for preventing the fuel flowing in and out of the valve from leaking and interposed between the valve housing and the casing (See Rejections in Claims 16 and 18).

### ***Response to Arguments***

Applicant's arguments filed 7/1/2008 have been fully considered but they are not persuasive.

### ***Applicant's Arguments***

In rejecting claim 5, the Examiner takes the position that this claim is "unpatentable over Kessler, Maisch and Japan ('141) as applied to claim 1 above, and further in view of Mizushima" (at page 3 of Action). It is not clear in making this rejection whether Japan '141 is being relied upon as the primary reference or whether Kessler is used for this purpose, given the order stated. Clarification is requested.

Preliminarily, it should be noted that while the claims are directed to a **"combustion apparatus"**, and in the case of claim 22 and its dependent claims a subassembly for a **"combustion apparatus"**, the disclosure and claims are focused specifically on a device for continuously generating heat, as opposed to a device such as an internal combustion engine. As seen in Figure 1, for example, the device shown therein has a combustion chamber 10 with holes 56, 57 formed through a wall bounding at least a portion thereof. These holes are designed to introduce air from a blower 11 into the chamber. As shown in Figure 2, the chamber is open at its bottom to permit continuous air flow. The flame, resulting from burning of the fuel, extends downward through the open bottom of the combustion chamber to heat an object. This construction would be readily understood by anyone skilled in this art to be one

designed to cause a flame to continuously heat an object, without fluctuations, other than those selected through different opted for temperature settings. **It is respectfully submitted that the considerations in designing a combustion apparatus for continuously heating an object, such as water, or the like, and an internal combustion engine, are very significantly different.** To clarify the structure, and more clearly distinguish it from an internal combustion, amendatory claim language has been added to each of the pending claims.

Applicant respectfully submits that it would not be obvious to simply interchange fuel control components **between heaters and internal combustion engines**. While, as the Examiner notes in the paragraph bridging pages 2 and 3 of the Action, Maisch does use a valve that is controlled to regulate the output of fuel, applicant respectfully submits that the output in Maisch is not "continuous" in the sense that it is with the claimed heater wherein fuel is required to be continuously both injected and burned. On the other hand, Maisch, by reason of being related to an internal combustion engine, **is directed to fuel delivery that appears to be periodically interrupted through operation of the valve, and thus is not "continuous" in the sense claimed.**

### ***Examiner's Response to Arguments***

With regards to Applicant's first argument, Examiner has pedantically rejected the claimed subject matter above and Applicant is welcomed to call Examiner for any further clarification.

With regards to Applicant's second and third untenable arguments, the crux of Applicant's argument is that Corona is non-analogous art, however, the claim language clearly states:

“the spraying means configured to cause fuel supplied from the fuel tank to be continuously supplied to the combustion chamber for continuous burning therein and generation of heat therein, and an **intermittently operating valve disposed in the second channel so as to [be closed and opened] intermittently or [periodically]** to adjust an amount of the fuel continuously sprayed by the spraying means” and Applicant has already highlighted that “**combustion apparatus**” is also a claim limitations.

As such and using reasonable interpretation, the claim language (i.e. **periodically, closed, and opened**) does not match the specificity of Applicant's remarks that “This construction would be readily understood by anyone skilled in this art to be one designed to cause a flame **to continuously** heat an object” and does not preclude only to burners. Applicant is reminded to See MPEP 2111. In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969) The court explained that “reading a claim in light of the specification, to thereby interpret limitations explicitly recited in the claim, is a quite different thing from ‘reading limitations of the specification into a claim,’ **to thereby narrow the scope of the claim by implicitly adding disclosed limitations which have no express basis in the claim.**” Thus, the claim is not limited to such interpretation and the rejection still holds.

Also, Applicant is reminded to See MPEP 2145, Section IV. **One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references.** In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); In re Merck & Co., Inc., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In addition, Applicant is reminded to See MPEP 2144.04 (V) (Part E)

As such, this action is made final.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEITH COLEMAN whose telephone number is (571)270-3516. The examiner can normally be reached on 5:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Cronin can be reached on (571)272-4536. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KAC  
/K. C./  
Examiner, Art Unit 3747

/Stephen K. Cronin/  
Supervisory Patent Examiner, Art Unit 3747